NICE National Institute for Health and Care Excellence

NICE quality standard

Renal and ureteric stones

Quality standard

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www.nice.org.uk/guidance/qs195

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This standard is based on NG118.

This standard should be read in conjunction with QS90, QS36, QS5, QS76 and QS72.

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NICE has developed guidance and a quality standard on patient experience in adult NHS services (see the NICE Pathway on patient experience in adult NHS services), which should be considered alongside these quality statements.

Other quality standards that should be considered when commissioning or providing renal and ureteric stones services include:

- Urinary tract infections in adults. NICE quality standard 90
- Acute kidney injury. NICE quality standard 76
- Renal replacement therapy services for adults. NICE quality standard 72
- Urinary tract infection in children and young people. NICE quality standard 36
- Chronic kidney disease in adults. NICE quality standard 5

A full list of NICE quality standards is available from the quality standards topic library.

Quality statement 1: Diagnostic imaging

Quality statement

Adults with suspected renal colic have low-dose non-contrast CT within 24 hours of presentation.

Rationale

CT should be performed as soon as possible, unless it is contraindicated, to prevent delays to diagnosis and treatment that can cause renal function to decline. CT within 24 hours also prevents people being in pain for long periods while they wait for a scan and definitive management.

Quality measures

Structure

a) Evidence of the availability of CT scanning equipment to perform low-dose non-contrast CT scans for adults with suspected renal colic.

Data source: Local data collection, for example, service specifications.

b) Evidence of the availability of staff to perform low-dose non-contrast CT scans for adults within 24 hours of presentation with suspected renal colic.

Data source: Local data collection, for example, staff rotas.

Process

a) Proportion of low-dose non-contrast CT scans performed within 24 hours of presentation for adults who presented in primary care with suspected renal colic.

Numerator – the number in the denominator performed within 24 hours of presentation.

Denominator – the number of low-dose non-contrast CT scans for adults who presented in primary care with suspected renal colic.

Data source: Local data collection, for example, local audit of patient records from radiology departments.

b) Proportion of low-dose non-contrast CT scans performed within 24 hours of presentation for adults who presented in an emergency department with suspected renal colic.

Numerator – the number in the denominator performed within 24 hours of presentation.

Denominator – the number of low-dose non-contrast CT scans for adults who presented in an emergency department with suspected renal colic.

Data source: Local data collection, for example, local audit of patient records from radiology departments.

c) Average time from people presenting with suspected renal colic to having a low-dose non-contrast CT scan.

Data source: Local data collection, for example, local audit of patient records from radiology departments.

Outcome

Level of renal function for people with renal and ureteric stones.

Data source: Local data collection, for example, local audit of patient records.

What the quality statement means for different audiences

Service providers (such as GP practices and emergency departments) ensure that staff are aware of referral pathways and that services work together to refer adults with suspected renal colic for low-dose non-contrast CT. They ensure that CT scanning equipment and staff are available to perform low-dose non-contrast CT for adults with

suspected renal colic within 24 hours of presentation.

Healthcare professionals (such as primary care practitioners, emergency department practitioners and paramedics) take a medical history and carry out a clinical examination of adults presenting with acute abdominal or flank pain. They are aware of referral pathways for low-dose non-contrast CT, and they refer adults with suspected renal colic to have this imaging within 24 hours of presentation, unless it is contraindicated (for example, in pregnant women).

Commissioners (such as clinical commissioning groups and NHS England) ensure that services have referral pathways and work together to refer adults with suspected renal colic to have low-dose non-contrast CT within 24 hours of presentation, unless it is contraindicated (for example, in pregnant women). Services should have the equipment and capacity to perform this imaging within 24 hours of presentation.

Adults with severe pain that could be kidney stones have an examination of their abdomen and discuss their symptoms with a healthcare professional. If the doctor thinks they might have a kidney stone, they have a CT scan within 24 hours, unless there is a reason why it is unsuitable (for example, they are pregnant).

Source guidance

Renal and ureteric stones: assessment and management. NICE guideline NG118 (2019), recommendation 1.1.1

Definitions of terms used in this quality statement

Suspected renal colic

Suspicion based on history and clinical examination of people presenting with abdominal or flank pain in general. [NICE's guideline on renal and ureteric stones, evidence review B]

Equality and diversity considerations

If renal colic is suspected in pregnancy, ultrasound should be offered instead of CT to avoid the risks associated with radiation exposure in pregnancy.

Children and young people should not receive non-contrast CT as first-line imaging for suspected renal colic. Ultrasound should be offered instead to minimise radiation exposure.

Quality statement 2: Pain management

Quality statement

Adults, children and young people with suspected renal colic receive a non-steroidal anti-inflammatory drug (NSAID) as first-line treatment.

Rationale

Pain relief is the first step in managing acute renal colic. NSAIDs are the most effective form of pain relief for renal colic. Ensuring that people receive NSAIDs by any route as first-line treatment, unless there are contraindications, reduces the need for additional pain relief and reduces ongoing pain.

Quality measures

Structure

Evidence of written clinical protocols to ensure that people with suspected renal colic are offered an NSAID as first-line treatment, unless it is contraindicated.

Data source: Local data collection, for example, service protocols.

Process

Proportion of adults, children and young people newly presenting with suspected renal colic, and no contraindications for an NSAID, who receive an NSAID as first-line treatment.

Numerator – the number in the denominator who receive an NSAID as first-line treatment.

Denominator – the number of adults, children and young people newly presenting with suspected renal colic and no contraindications for an NSAID.

Data source: Local data collection, for example, local audit of patient records.

Outcome

Self-reported pain score of people with suspected renal colic after receiving pain management.

Data source: Local data collection, for example, survey of people with suspected renal colic using a questionnaire to assess pain.

What the quality statement means for different audiences

Service providers (such as GP practices and emergency departments) ensure that written clinical protocols are in place to offer an NSAID by any route as first-line treatment for adults, children and young people with suspected renal colic, unless it is contraindicated.

Healthcare professionals (such as GPs and emergency department practitioners) take a medical history and carry out a clinical examination of adults, children and young people presenting with acute abdominal or flank pain. If renal colic is suspected, they offer an NSAID by any route as first-line treatment, unless it is contraindicated.

Commissioners (such as clinical commissioning groups and NHS England) ensure that services have written clinical protocols in place for offering an NSAID by any route as first-line treatment for adults, children and young people with suspected renal colic, unless it is contraindicated.

Adults, children and young people with severe pain that could be kidney stones have an examination of their abdomen and discuss their symptoms with a healthcare professional. They discuss pain relief and treatment options and, if the doctor thinks they might have a kidney stone, they are offered a non-steroidal anti-inflammatory drug (NSAID) to help with the pain, unless there is a reason why it is unsuitable.

Source guidance

Renal and ureteric stones: assessment and management. NICE guideline NG118 (2019), recommendation 1.2.1

Definitions of terms used in this quality statement

Suspected renal colic

Suspicion based on history and clinical examination of people presenting with abdominal or flank pain in general. [NICE's guideline on renal and ureteric stones, evidence review B]

Equality and diversity considerations

People with dementia, cognitive impairment, learning disabilities or language barriers may have difficulties communicating their pain threshold. Healthcare professionals should establish the person's cognitive status, and whether they have any speech, language or other communication needs. They should also establish the person's current level of understanding; and whether they would like a person important to them to be present when discussing their pain and pain relief.

NSAIDs should be avoided during pregnancy, and particularly in the third trimester, unless the potential benefit outweighs the risk. If their use cannot be avoided in the third trimester, the UK Teratology Information Service recommends that antenatal monitoring is discussed with a fetal medicine unit. Healthcare professionals should offer alternative pain management for suspected renal colic during pregnancy in line with the recommendations on pain management in NICE's guideline on renal and ureteric stones.

Quality statement 3: Timing of surgical treatment

Quality statement

Adults with ureteric stones and renal colic have surgical treatment within 48 hours of diagnosis or readmission, if pain is ongoing and not tolerated, or the stone is unlikely to pass.

Rationale

Early intervention for ureteric stones can make treatment easier and more effective, and reduce the need for temporary measures, like stenting, and further treatment after surgery. It can also prevent prolonged pain, and potential damage to the kidney caused by the ureter being blocked.

Quality measures

Structure

a) Evidence of local referral pathways to ensure that adults with ureteric stones and renal colic have surgical treatment within 48 hours of diagnosis or readmission.

Data source: Local data collection, for example, local commissioning agreements and service specifications.

b) Evidence of the availability of lithotripters, emergency operating theatres and staff needed to perform surgical treatment for adults with ureteric stones and renal colic within 48 hours of diagnosis or readmission.

Data source: Local data collection, for example, service specifications and staff rotas.

Process

a) Proportion of adults with a new diagnosis of ureteric stones and renal colic, with ongoing pain that is not tolerated, or a stone that is unlikely to pass, who have surgical treatment within 48 hours of diagnosis.

Numerator – the number in the denominator who have surgical treatment within 48 hours of diagnosis.

Denominator – the number of adults with a new diagnosis of ureteric stones and renal colic, with ongoing pain that is not tolerated, or a stone that is unlikely to pass.

Data source: Local data collection, for example, local audit of patient records.

b) Proportion of adults readmitted with ureteric stones and renal colic, with ongoing pain that is not tolerated, or a stone that is unlikely to pass, who have surgical treatment within 48 hours of readmission.

Numerator – the number in the denominator who have surgical treatment within 48 hours of readmission.

Denominator – the number of adults readmitted with ureteric stones and renal colic, with ongoing pain that is not tolerated, or a stone that is unlikely to pass.

Data source: Local data collection, for example, local audit of patient records.

Outcomes

a) Proportion of adults who have had ureteric stones who had a primary stenting procedure.

Numerator – the number in the denominator who had a primary stenting procedure.

Denominator – the number of adults who have had ureteric stones.

Data source: Local data collection, for example, local audit of patient records. The Getting It Right First Time (GIRFT) urology report includes findings on the use of ureteric stenting in trusts across England.

b) Health-related quality of life in adults with ureteric stones.

Data source: Local data collection, for example, patient surveys.

What the quality statement means for different audiences

Service providers (such as secondary care services) ensure that referral pathways are in place so that adults with ureteric stones and renal colic with ongoing pain that persists with the maximum dose and type of analgesia, or a stone that is unlikely to pass, have surgical treatment within 48 hours of diagnosis or readmission. They also ensure that lithotripters, emergency operating theatres and staff are available to perform the surgical treatment within this timeframe.

Healthcare professionals (such as urologists) assess adults with ureteric stones and renal colic to see if they still have pain after receiving the maximum dose and type of analgesia, or whether the stone is unlikely to pass. If so, they refer them for surgical treatment to be performed within 48 hours of diagnosis or readmission.

Commissioners (such as clinical commissioning groups) ensure that services have referral pathways for adults with ureteric stones and renal colic with pain that persists with the maximum dose and type of analgesia, or a stone that is unlikely to pass, to have surgical treatment within 48 hours of diagnosis or readmission. They also ensure that services have access to lithotripters and emergency operating theatres, and capacity to perform the surgical treatment within this timeframe.

Adults with a stone in their ureter and severe pain caused by the stone are checked to see if they still have pain with the highest dose and type of pain medication, or the stone is unlikely to pass on its own. If so, they have surgical treatment within 48 hours of diagnosis or readmission.

Source guidance

Renal and ureteric stones: assessment and management. NICE guideline NG118 (2019), recommendation 1.5.4

Definitions of terms used in this quality statement

Surgical treatment

Surgical treatment for ureteric stones includes shockwave lithotripsy, ureteroscopy and percutaneous nephrolithotomy. Treatment will depend on the size of the stone. [NICE's guideline on renal and ureteric stones, recommendation 1.5.3]

Equality and diversity considerations

No evidence was found to make a recommendation on timing of surgical treatment for children and young people, and so this statement only applies to adults. Children and young people may spontaneously pass larger stones and therefore it is reasonable to have a period of observation or conservative treatment before intervention. See evidence review G in NICE's guideline on renal and ureteric stones.

Quality statement 4: Metabolic testing

Quality statement

Adults with renal or ureteric stones have their serum calcium measured.

Rationale

Testing serum calcium is a simple way of identifying underlying hypercalcaemic conditions, such as primary hyperparathyroidism or sarcoidosis, that can be treated to prevent recurrence of renal or ureteric stones.

Quality measures

Structure

Evidence of written clinical protocols to ensure that adults with renal or ureteric stones have their serum calcium measured.

Data source: Local data collection, for example, service protocols.

Process

Proportion of adults with a new diagnosis of renal or ureteric stones who have their serum calcium measured.

Numerator – the number in the denominator who have their serum calcium measured.

Denominator – the number of adults with a new diagnosis of renal or ureteric stones.

Data source: Local data collection, for example, local audit of patient records.

Outcome

Diagnosis rates of hypercalcaemic conditions.

Data source: Local data collection, for example, local audit of patient records.

What the quality statement means for different audiences

Service providers (such as GP practices and secondary care services) ensure that systems are in place for adults with renal or ureteric stones to have their serum calcium measured on presentation or at a follow-up appointment and the test results acted on.

Healthcare professionals (such as GPs, nephrologists, urologists and emergency department practitioners) arrange for adults with renal or ureteric stones to have their serum calcium measured on presentation or at a follow-up appointment. For adults with recurring stones, healthcare professionals should use clinical judgement to decide whether to measure serum calcium again if it was measured recently. If tests identify an underlying condition, healthcare professionals should discuss treatment options with the person.

Commissioners (such as clinical commissioning groups and NHS England) ensure that services have systems in place to measure serum calcium for adults with renal or ureteric stones on presentation or at a follow-up appointment and act on the results.

Adults with a stone in their kidney or ureter have blood tests to check if there is anything that could have caused the stone. If a condition is identified, they discuss treatment options with the doctor.

Source guidance

Renal and ureteric stones: assessment and management. NICE guideline NG118 (2019), recommendation 1.7.2

Equality and diversity considerations

All children and young people should have a metabolic assessment, but the nature of the assessment may vary. Referral to a paediatric nephrologist or urologist with expertise in

testing for metabolic conditions should be considered. See recommendation 1.7.3 and evidence review A in NICE's guideline on renal and ureteric stones.

Quality statement 5: Dietary advice

Quality statement

Adults, children and young people with renal or ureteric stones are given advice on diet and fluid intake.

Rationale

Renal and ureteric stones are painful and people who have had them want to prevent them occurring again. There are simple changes to diet and fluid intake that can be made to reduce the risk of stones recurring. Ensuring that people know what these changes are will reduce recurrence and the pain caused by stones.

Quality measures

Structure

a) Evidence of local arrangements to provide training to healthcare professionals on the advice they should give to people with renal or ureteric stones about diet and fluid intake to reduce the risk of stone recurrence.

Data source: Local data collection, for example, local service specifications and staff training records.

b) Evidence that information is available for people with renal and ureteric stones that contains advice on diet and fluid intake.

Data source: Local data collection, for example, information leaflets.

Process

Proportion of adults, children and young people with a new diagnosis of renal or ureteric stones who receive advice on diet and fluid intake.

Numerator – the number in the denominator who receive advice on diet and fluid intake.

Denominator – the number of adults, children and young people with a new diagnosis of renal or ureteric stones.

Data source: Local data collection, for example, local audit of patient records.

Outcome

Proportion of adults, children and young people who have had renal or ureteric stones who had further admissions or surgical treatment for a renal or ureteric stone.

Numerator – the number in the denominator who had a further admission or surgical treatment for a renal or ureteric stone.

Denominator – the number of adults, children and young people who have had renal or ureteric stones.

Data source: Local data collection, for example, local audit of patient records.

What the quality statement means for different audiences

Service providers (such as GP practices and secondary care services) ensure that healthcare professionals have the time and resources to provide advice to adults, children and young people with renal or ureteric stones on diet and fluid intake at diagnosis or at a follow-up appointment.

Healthcare professionals (such as GPs, general practice nurses, urologists, nephrologists, specialist urology nurses and dietitians) give advice to adults, children and young people with renal or ureteric stones at diagnosis or at a follow-up appointment on how much water to drink, and what to eat and drink, to reduce the risk of getting stones again. They document in the person's notes that the advice was given and what format it was in. They make sure that the person has understood the advice, and tailor the advice on fluid intake if standard advice would put people at risk, for example, if they have heart failure or acute hyponatremia.

Commissioners (such as clinical commissioning groups and NHS England) ensure that services have the capacity and resources to provide advice to adults, children and young people with renal or ureteric stones on diet and fluid intake at diagnosis or at a follow-up appointment.

Adults, children and young people with a stone in their kidney or ureter are given advice, when a stone is diagnosed or at a follow-up appointment, on how much water to drink, and what to eat and drink. The aim of the advice is to reduce the risk of getting stones again. Healthcare professionals check whether the person understands the advice given.

Source guidance

Renal and ureteric stones: assessment and management. NICE guideline NG118 (2019), recommendation 1.8.1

Definitions of terms used in this quality statement

Advice on diet and fluid intake

Advice given at presentation or at a follow-up appointment and before discharge that includes:

- adults to drink 2.5 litres to 3 litres of water per day, and children and young people (depending on their age) 1 litres to 2 litres
- adding fresh lemon juice to drinking water
- avoiding carbonated drinks
- adults to have a daily salt intake of no more than 6 g, and children and young people (depending on their age) 2 g to 6 g
- not restricting daily calcium intake, but maintaining a normal calcium intake of 700 mg to 1,200 mg per day for adults, and 350 mg to 1,000 mg per day for children and young people (depending on their age).

[Adapted from NICE's guideline on renal and ureteric stones, recommendation 1.8.1]

Equality and diversity considerations

Adults, children and young people should be provided with information about diet and fluid intake to prevent renal and ureteric stones recurring. They should be able to easily read and understand the information themselves, or with support. Information should be in a format that suits their needs and preferences. It should be accessible to people who do not speak or read English, and it should be culturally appropriate and age appropriate.

About this quality standard

NICE quality standards describe high-priority areas for quality improvement in a defined care or service area. Each standard consists of a prioritised set of specific, concise and measurable statements. NICE quality standards draw on existing NICE or NICE-accredited guidance that provides an underpinning, comprehensive set of recommendations, and are designed to support the measurement of improvement.

Expected levels of achievement for quality measures are not specified. Quality standards are intended to drive up the quality of care, and so achievement levels of 100% should be aspired to (or 0% if the quality statement states that something should not be done). However, this may not always be appropriate in practice. Taking account of safety, shared decision-making, choice and professional judgement, desired levels of achievement should be defined locally.

Information about how NICE quality standards are developed is available from the NICE website.

See our webpage on quality standard advisory committees for details of standing committee 1 members who advised on this quality standard. Information about the topic experts invited to join the standing members is available on the webpage for this quality standard.

This quality standard has been included in the NICE Pathway on renal and ureteric stones, which brings together everything we have said on a topic in an interactive flowchart.

NICE has produced a quality standard service improvement template to help providers make an initial assessment of their service compared with a selection of quality statements. This tool is updated monthly to include new quality standards.

NICE produces guidance, standards and information on commissioning and providing high-quality healthcare, social care, and public health services. We have agreements to provide certain NICE services to Wales, Scotland and Northern Ireland. Decisions on how NICE guidance and other products apply in those countries are made by ministers in the Welsh government, Scottish government, and Northern Ireland Executive. NICE guidance or other products may include references to organisations or people responsible for commissioning or providing care that may be relevant only to England.

Improving outcomes

This quality standard is expected to contribute to improvements in the following outcomes for people with renal or ureteric stones:

- quality of life
- knowledge of the condition
- self-management
- rate of stone recurrence
- early definitive treatment
- morbidity
- pain experience
- hospital readmission rates following interventions
- kidney function.

It is also expected to support delivery of the Department of Health and Social Care's NHS outcome framework.

Resource impact

NICE quality standards should be achievable by local services. The potential resource impact is considered by the quality standards advisory committee, drawing on resource impact work for the source guidance. Organisations are encouraged to use the resource impact report and template for the NICE guideline on renal and ureteric stones to help estimate local costs.

Diversity, equality and language

During the development of this quality standard, equality issues were considered and equality assessments for this quality standard are available. Any specific issues identified during development of the quality statements are highlighted in each statement.

Commissioners and providers should aim to achieve the quality standard in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity and foster good relations. Nothing in this quality standard should be interpreted in a way that would be inconsistent with compliance with those duties.

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Endorsing organisation

This quality standard has been endorsed by NHS England, as required by the Health and Social Care Act (2012)

Supporting organisations

Many organisations share NICE's commitment to quality improvement using evidence-based guidance. The following supporting organisations have recognised the benefit of the quality standard in improving care for patients, carers, service users and members of the public. They have agreed to work with NICE to ensure that those commissioning or providing services are made aware of and encouraged to use the quality standard.

- Royal College of Nursing (RCN)
- British Association of Urological Surgeons (BAUS)
- Royal College of Paediatrics and Child Health